

# IS NON-HODGKIN'S LYMPHOMA MORTALITY ASSOCIATED TO PESTICIDE USE IN BRAZIL?

**Patricia Boccolini**, *IESC/Universidade Federal do Rio de Janeiro, Brasil*

**Juliana Chrisman**, *ENSP/Fundação Oswaldo Cruz, Brasil*

**Rosalina Koifman**, *ENSP/Fundação Oswaldo Cruz, Brasil*

**Sergio Koifman**, *ENSP/Fundação Oswaldo Cruz, Brasil*

**Armando Meyer**, *IESC/Universidade Federal do Rio de Janeiro, Brasil*

**Background and aims:** Brazil has been among the main world pesticides consumers. The continued use of pesticides may be associated with the etiology of cancer, such as the non-Hodgkin's lymphoma (NHL). Estimate the correlation between per capita pesticides sales in 1985 and NHL mortality rates between 1996-2005, by Brazilian micro-regions.

**Methodology:** This is an ecological study where pesticides per capita consumption in 1985 was taken as a population exposure proxy to these chemicals in Brazil. There was studied all the NHL deaths among subjects between 20 and 69 years old, of both sexes, that occurred in the 446 Brazilian regions, out of the urban area, accordingly to the Geography and Statistical Brazilian Institute. These micro-regions were categorized into low, medium, high and very high pesticides consumption, according with per capita consumption quartiles. NHL mortality rates and the rate ratios for each quartile were obtained using the lowest quartile as reference. Spearman correlation were estimated between pesticide exposure and NHL mortality.

**Results:** A moderate correlation between per capita pesticides consumption and standardized mortality rate for NHL were found ( $r = 0.597$ ). Employing the micro-regions with low per capita consumption of pesticides as a reference, were observed a gradual increase in NHL risk death according to the consumption quartile of these substance: men - (second quartile – MRR= 1.69, CI 95% 1.68-1.84; third quartile - MRR=2.41, CI 95% 2.27-2.57; fourth quartile - MRR = 2.92, CI 95% 2.74-3.11) and females (second quartile – MRR= 1.87, CI 95% 1.69-2.06; third quartile - MRR=2.28, CI 95% 2.10-2.47; fourth quartile - MRR = 3.20; CI 95% 2.98-3.43).

**Conclusion:** These results suggest that Brazilian population exposure to pesticides in regions outside the urban areas in eighties may be associated with NHL mortality observed between 1996 and 2005.